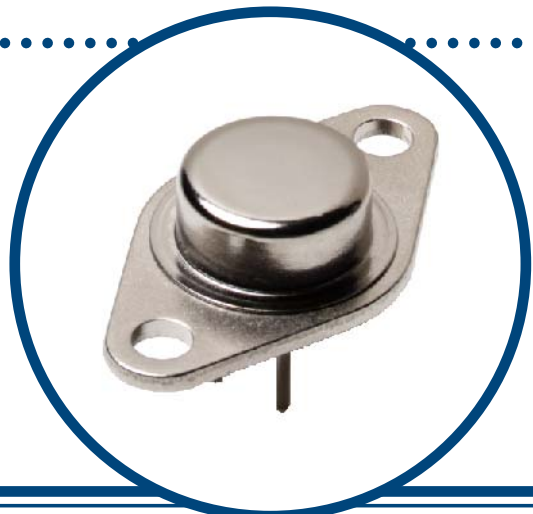


NPN SILICON TRANSISTOR

2N3766

- **LOW SATURATION VOLTAGE**
- **HIGH GAIN CHARACTERISTICS**
- **HERMETICALLY SEALED TO-66 METAL PACKAGE**
- **SCREENING OPTIONS AVAILABLE**
- **SWITCHING APPLICATIONS**
- **MEDIUM POWER AMPLIFIER APPLICATIONS**



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

V_{CEO}	Collector - Emitter Voltage	60V
V_{CBO}	Collector - Base Voltage	80V
V_{EBO}	Emitter - Base Voltage	6V
I_C	Collector Current	4A
I_B	Base Current	2A
P_T	Power Dissipation at $T_C = 25^\circ\text{C}$	25W
	Derate Above 25°C	143mW/ $^\circ\text{C}$
T_J, T_{stg}	Operating & Storage Junction Temperature Range	-65 to $+200^\circ\text{C}$

THERMAL PROPERTIES

Parameters	Min.	Typ.	Max.	Unit
$R_{\theta JC}$			7	$^\circ\text{C/W}$

DYNAMIC CHARACTERISTICS

Parameters	Test Conditions	Min.	Typ.	Max.	Unit.
$ h_{fe} $	Small - Signal Short - Circuit Forward Current Transfer Ratio $I_C = 500\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	1.0		8	MHz
C_{obo}	Output Capacitance $I_E = 0$ $V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$			50	pF
t_{on}	Turn - On Time $V_{CC} = 30\text{V}$ $I_C = 0.5\text{A}$ $I_{B1} = 0.05\text{A}$			0.25	μs
t_{off}	Turn - off Time $V_{CC} = 30\text{V}$ $I_C = 0.5\text{A}$ $I_{B1} = I_{B2} = 0.05\text{A}$			2.5	

* Pulse Test $t_p = 300\mu\text{s}$, $\delta \leq 2\%$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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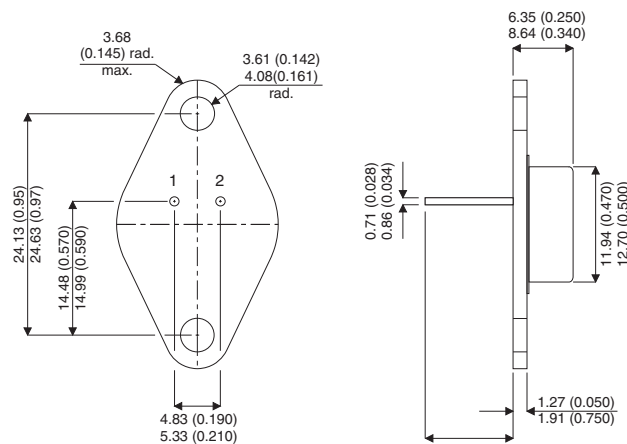
2N3766

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Parameters	Test Conditions	Min.	Typ.	Max.	Unit.
$V_{(BR)CEO}^*$ Collector Emitter Breakdown Voltage	$I_C = 100\text{mA}$ $I_B = 0$	60			V
I_{CEO} Collector - Emitter Cut-Off Current	$V_{CE} = 60\text{V}$			500	μA
I_{CEX} Collector - Emitter Cut-Off Current	$V_{CE} = 80\text{V}$ $V_{BE} = -1.5\text{V}$			10	
	$V_{CE} = 50\text{V}$ $V_{BE} = -1.5\text{V}$ $T_C = 150^\circ\text{C}$			1.0	mA
I_{EBO} Emitter - Base Cut-Off Current	$I_C = 0$ $V_{EB} = 6\text{V}$			500	μA
I_{CBO} Collector - Base Cut-Off Current	$I_E = 0$ $V_{CB} = 80\text{V}$			10	
V_{BE}^* Base - Emitter Voltage	$I_C = 1.0\text{A}$ $V_{CE} = 10\text{V}$			1.5	V
h_{FE}^* Forward - Current Transfer Ratio	$I_C = 50\text{mA}$ $V_{CE} = 5\text{V}$	30			
	$I_C = 500\text{mA}$ $V_{CE} = 5\text{V}$	40			
	$I_C = 1\text{A}$ $V_{CE} = 10\text{V}$	20			
	$I_C = 500\text{mA}$ $V_{CE} = 5\text{V}$ $T_C = -55^\circ\text{C}$	13			
$V_{CE(sat)}^*$ Collector Emitter Saturation Voltage	$I_C = 0.5\text{A}$ $I_B = 50\text{mA}$			1.0	V
	$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			2.5	
$V_{BE(sat)}^*$ Base - Emitter Saturated Voltage	$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			1.5	

Mechanical Data

Dimensions in mm (inches)



T066 (TO-213AA)

1 - Base

2 - Emitter

Case = Collector